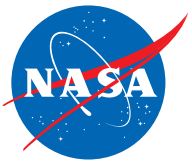


THE INNOVATION CATALYST



June 2022

IN THIS ISSUE:

- WALLOPS FLIGHT FACILITY AND ROCKET LAB PROPEL INNOVATION FORWARD
- INNOVATOR HOUR
- CELEBRATING A GODDARD AFRICAN AMERICAN INNOVATOR
- SPO PARTICIPATION AT GOLDMAN SACHS 10KSB SUMMIT
- GODDARD MANAGES LRO FOR CAPSTONE CUBESAT
- BOOK OF THE MONTH

TECH TRANSFER TIP

with Technology Liaison
Samantha J. Kilgore:

"IT ALL STARTS WITH THE DISCLOSURE! DISCLOSING AN IDEA IS THE MOST VALUABLE STEP AN INNOVATOR CAN TAKE IN THE TECHNOLOGY TRANSFER PROCESS. WHILE IT MAY SEEM LIKE ADDED WORK, IT LAYS THE FOUNDATION FOR AMAZING COMMERCIALIZATION POTENTIAL. AND, OUR OFFICE CAN HELP WRITE AND SUBMIT TECHNOLOGY DISCLOSURES!"



»» UPCOMING EVENTS:



INNOVATOR HOUR

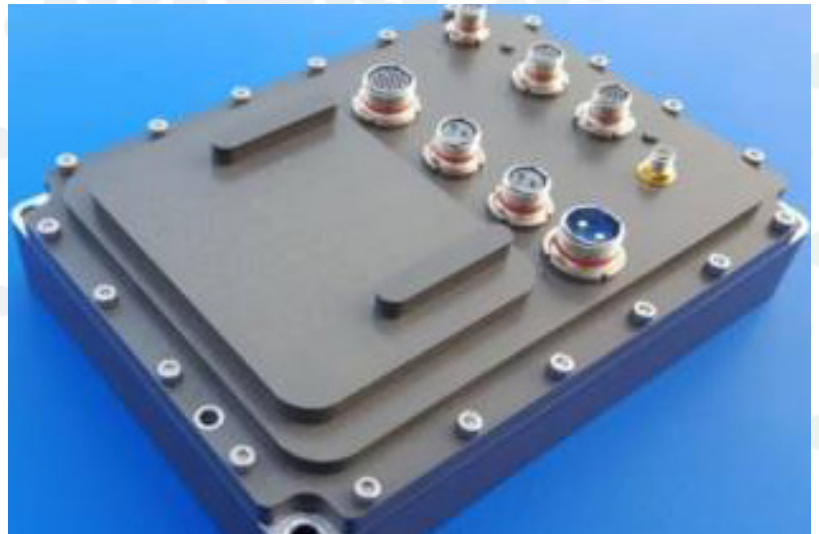
TUESDAY, JUNE 14, 2022

1:00–2:00 P.M.

Wallops Flight Facility and Rocket Lab Propel Innovation Forward

Over the last several months, Goddard's Wallops Flight Facility at Wallops Island, VA, and California-headquartered Rocket Lab USA, Inc., have been at the forefront of a significant milestone in the commercial space sector. In February 2022, Wallops Flight Facility successfully completed safety certification trials for the NASA Autonomous Flight Termination Unit (NAFTU) software code.

A collaboration between the Wallops Flight Facility, NASA Headquarters, the U.S. Air Force, U.S. Space Force, and the Federal Aviation Administration, NAFTU is a game-changing command and control system available to launch vehicle providers for use at all U.S. launch ranges. This breakthrough will help instill a high degree of confidence in public safety during launch operations. The system also provides several key benefits: wider launch windows, smaller downrange safety corridors, and reduction in the need and expense of ground-based systems.



The NASA Autonomous Flight Termination Unit. Photo Credit: NASA

Rocket Lab is among the launch vehicle providers currently implementing the software. In May, they participated in a Goddard Strategic Partnerships Office-led effort to amend the previously licensed Software Usage Agreement (SUA) for NAFTU. The amendment allows for expedited access to future version updates of the software and technical documentation. Goddard is incorporating the same amendments into SUAs and licenses of all current recipients of the NAFTU software.

Rocket Lab also recently broke ground on a state-of-the-art rocket production complex near the Wallops Flight Facility. The complex will manufacture Rocket Lab's Neutron launch vehicle and use the NAFTU software. Neutron will be a next-generation, reusable rocket designed to deliver reliable and cost-effective launches for payloads to low-Earth orbit and beyond.

Its large seven-meter fairing and high payload lift capacity in a downrange landing configuration makes it ideal for both constellation deployment and large single spacecraft missions.

The one-two combination of NAFTU and Neutron is a shining example of how successful technology transfer and partnerships drive competitive markets, push innovation forward, and spur economic growth.



Photo Credit: Rocket Lab

THE STRATEGIC PARTNERSHIPS OFFICE PRESENTS

INNOVATOR HOUR

Do you have questions about protecting your innovation?

Do you want to learn more about how to submit New Technology Reports?

Do you have general questions about technology transfer or partnerships?

SPO can help!

Sign up for a 20-minute Innovator Hour timeslot and get a one-on-one Teams session with a SPO representative!

NEXT SESSION: **TUESDAY, JUNE 14, 1:00-2:00 P.M.**

HOW DO I SIGN UP?

To register for the upcoming session and secure your timeslot, please fill out [this form.](#)

Timeslots available:

1:00-1:20 P.M.

1:20-1:40 P.M.

1:40-2:00 P.M.

JUNETEENTH

CELEBRATING A GODDARD AFRICAN AMERICAN INNOVATOR

On June 18, 2021, President Joe Biden proclaimed by Executive Order that Juneteenth would become a federal holiday. Juneteenth, celebrated each June 19th, commemorates the emancipation of enslaved people in the U.S. Along with our celebration of Juneteenth this month, we recognize the achievements of Dr. Aprille Ericcson, an African American engineer who has made many noteworthy contributions to Goddard and the field of aerospace engineering. Ericcson was the first woman to receive a Ph.D. in mechanical engineering from Howard University. She is also the first African American woman to receive a Ph.D. in engineering as a civil servant at Goddard.



Photo Credit: Leigh Loftus and Western Society of Engineers, Chicago

Ericcson started her career at Goddard in 1992 as an engineer. Since that time, she has contributed to many Goddard missions and programs, including the James Webb Space Telescope, the Advanced Topographic Laser Altimeter System, and the Lunar Reconnaissance Orbiter. In 2015, Ericcson along with others received a patent (US9938023B2) for developing a system and method for an integrated satellite platform.

Dr. Ericcson has held numerous positions over her three decades at Goddard, currently serving as the New Business Lead (NBL) for Goddard's Instrument Systems and

Technology Division. In this role, she fosters government partnerships to enable industry and small businesses to collaborate with universities and solve strategic R&D challenges faced by various government agencies in the U.S. Ericcson is also the recipient of numerous awards, including the prestigious 2016 Washington Award, which recognizes engineers whose accomplishments have "pre-eminently promoted the happiness, comfort, and well-being of humanity." Past honorees include Orville Wright, Henry Ford, Neil Armstrong, and Bill Nye.

When asked to reflect on her time at Goddard, Ericcson has this to say: "From peering into the distant reaches of the universe to examine things like the Big Bang Theory, black holes, and gravitational waves, to our exploration efforts with the moon and Mars, to addressing a vital issue such as climate change, it has been and continues to be an honor to work with so many bright and committed individuals."

SPO PARTICIPATION AT GOLDMAN SACHS 10,000 SMALL BUSINESSES SUMMIT



Photo Credit: Goldman Sachs

There's no denying the role small businesses and entrepreneurs play in moving innovation forward, developing new technologies, and creating jobs. No one understands this more than those in Goddard's Strategic Partnerships Office (SPO). Over the years, we have partnered with hundreds of small businesses and entrepreneurs to deliver Goddard-developed technologies and solutions to the marketplace.

Through our outreach efforts, SPO is cultivating a strategic relationship with the Goldman Sachs 10,000 Small Businesses (10KSB) Program, a nationwide initiative to provide business education, support services, and pathways to capital for growth-oriented entrepreneurs. Earlier this year, SPO Chief and Deputy Chief made a presentation to the Goldman Sachs 10KSB leadership team to introduce Goddard's Technology Transfer, SBIR/STTR, and Partnerships programs and the potential benefits to the small business community. Our efforts led to an invitation to participate in the upcoming Goldman Sachs 10KSB Summit. SPO along with the Small Business Office will represent Goddard during the event on July 20, 2022, at the Nationals Park in Washington, DC.



Darryl R. Mitchell, Chief



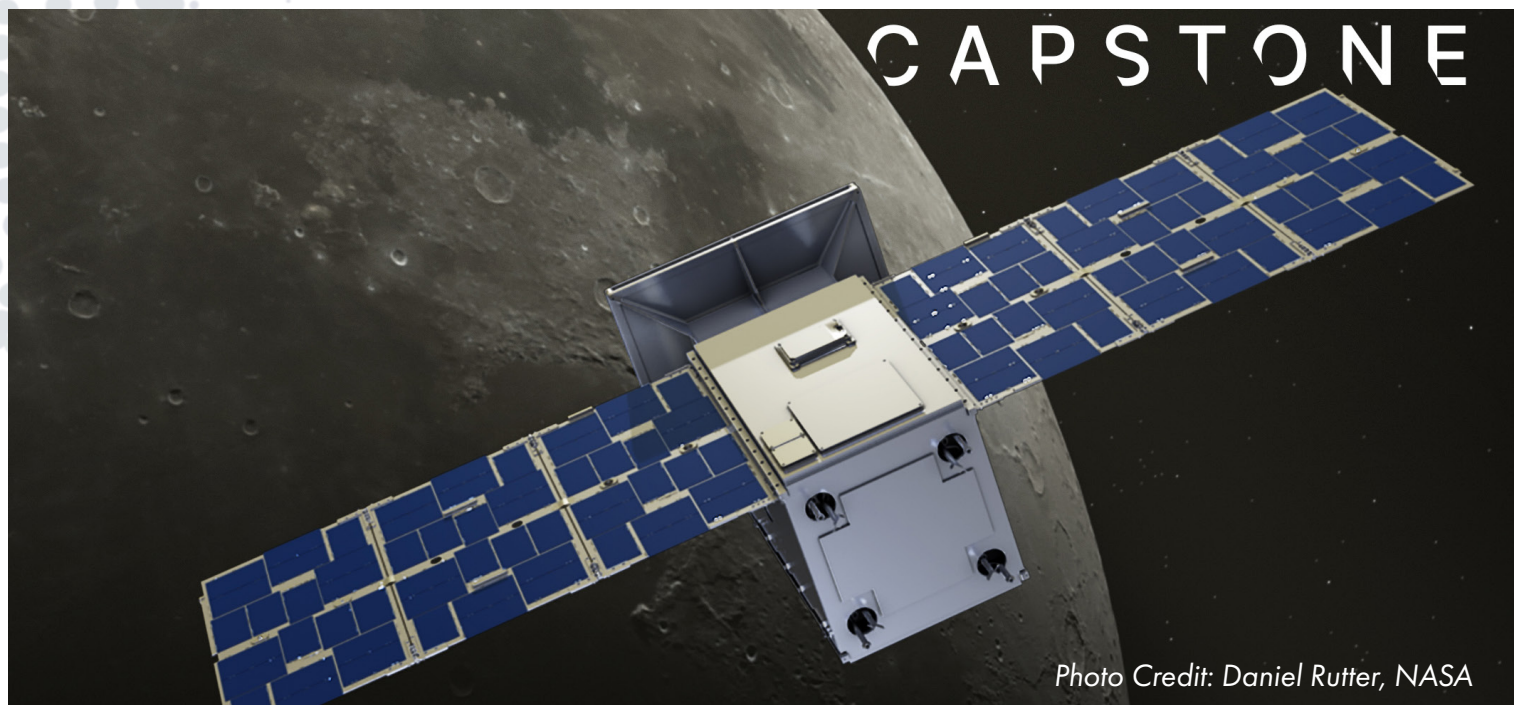


Photo Credit: Daniel Rutter, NASA

GODDARD MANAGES LUNAR RECONNAISSANCE ORBITER FOR CAPSTONE CUBESAT

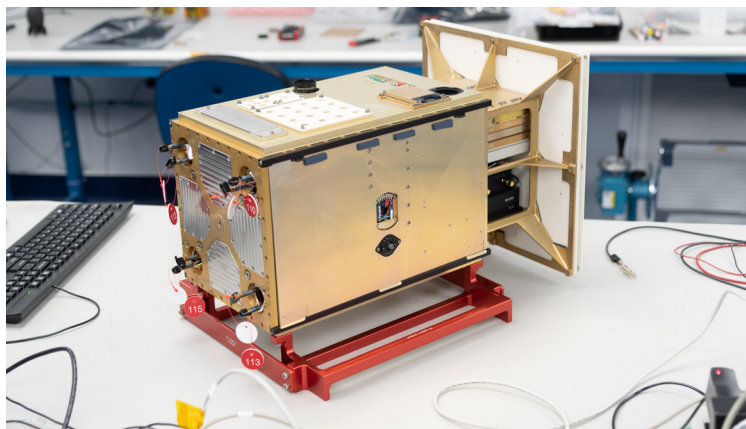


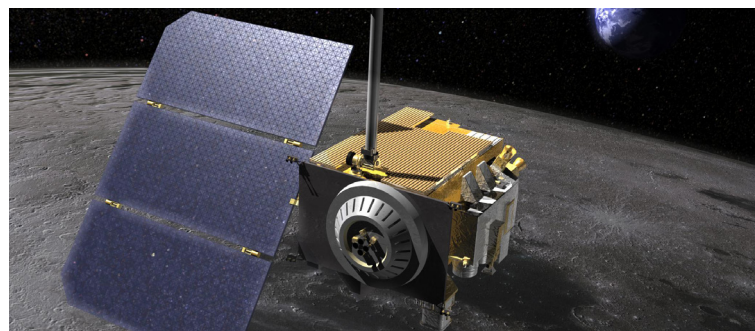
Photo Credit: Nora Moran - NASA - Johnson

The Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment, better known as CAPSTONE, is a microwave- sized CubeSat that will launch no earlier than June 13 of this year on Rocket Lab's Electron rocket from the company's Launch Complex 1 in New Zealand. CAPSTONE will play a big role in lunar exploration. Goddard will manage the Lunar Reconnaissance Orbiter (LRO) for this launch and CAPSTONE's journey through space.

The LRO is a robotic mission that set out in June 2009 to map the moon's surface and, after a year of exploration, was extended with a unique set of scientific objectives. LRO observations have already enabled numerous groundbreaking discoveries,

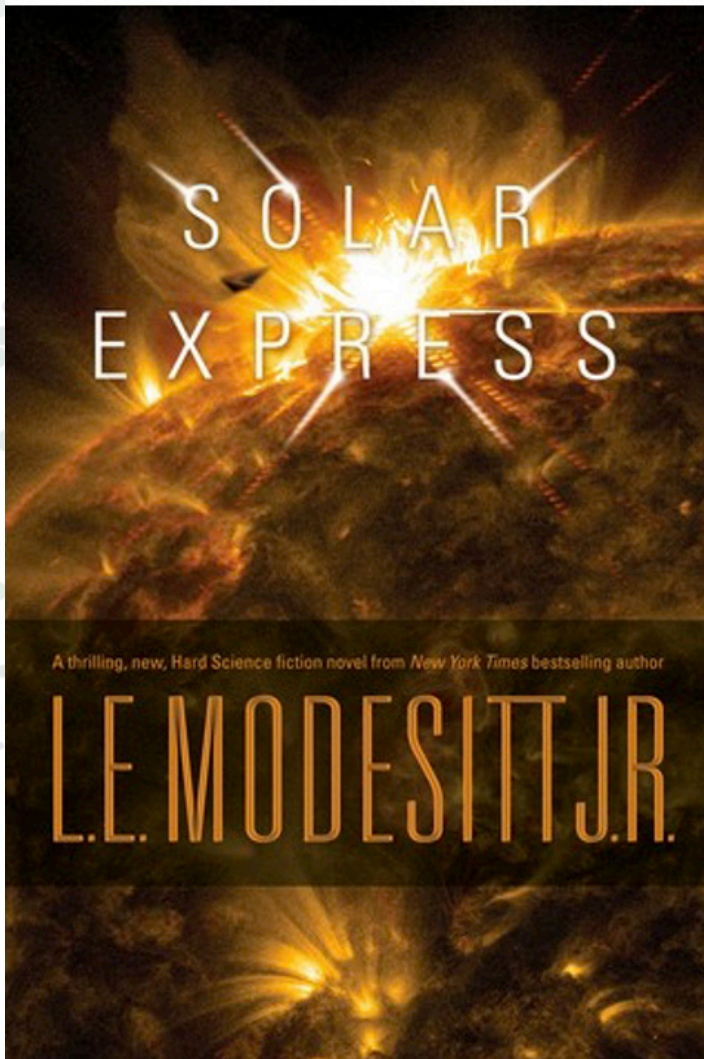
which have allowed scientists and researchers to better understand the dynamic imaging of the moon as well as improved understanding of processes that take place in our solar system.

The LRO will serve as reference point for CAPSTONE's orbit around the moon and will play a key role in determining CAPSTONE's location in space and measuring the success of CAPSTONE's orbit. The pairing of these technologies will determine whether CAPSTONE's autonomous navigation capabilities can allow future spacecraft to have successful navigation without having to rely on exclusive tracking from Earth. This launch could potentially open new opportunities for space exploration in ways that have never been attempted before. It also could pave the way for future technology, demonstrating the ability to perform without ground support.



Artist rendering of the Lunar Reconnaissance Orbiter LRO. Photo Credit: NASA/GSFC

THE LITERARY X-CHANGE BOOK OF THE MONTH



You can't militarize space. This one rule has led to decades of peaceful development of space programs worldwide. However, increasing resource scarcity and a changing climate on Earth's surface is causing some interested parties - namely India, the North American Union, and the Sinese Federation - to militarize. The discovery of a strange artifact by Dr. Alayna Wong precipitates a crisis. What appears to be a hitherto undiscovered comet is soon revealed to be an alien structure on a cometary trajectory toward the sun. Now there is a race between countries to see who can study and control the artifact, dubbed the "Solar Express", before it perhaps destroys itself.

Leading the way for the North American Union is Alayna's friend, Captain Christopher Tavoian, one of the first shuttle pilots to be trained for combat in space. But as the alien craft gets closer to its destination, it begins to alter the surface of the sun in strange new ways - ways that could lead Alayna to revolutionary discoveries, provided that Chris can prevent war from breaking out as he navigates among the escalating tensions between nations.

(Publisher's Summary)

WHAT IS THE LITERARY X-CHANGE?

In 2021, the Strategic Partnerships Office (SPO) launched a community library with a little help from Tor Books. Goddard has partnered for years with Tor, a leading publisher of science fiction, by connecting them with subject matter experts to promote the science in "science fiction." Located in the lobby of Building 22, The Literary X-Change is available to the entire Goddard community. Here's how it works:

TAKE ONE

If a book strikes your fancy take it. Read it, enjoy it, and—when you're done—share it with a friend or bring it back to the X-Change.

GIVE ONE

Everyone can pitch in to keep the library stocked. Bring books you'd like to share with the Goddard community when you can and continue being a friend of The Literary X-Change!